UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF

MAR 0 4 1985

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Edward J. Schwartzbauer, Esq.
Dorsey & Whitney
2200 First Bank Place East
Minneapolis, Minnesota 55402

RE: In the Matter of Reilly Tar & Chemical Corporation §106 CERCLA Administrative Order V-W-84-011

Dear Mr. Schwartzbauer:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the design which Reilly Tar & Chemical Corporation submitted for the granular activated carbon (GAC) water treatment system for St. Louis Park municipal wells designated SLP 15/10. Such design was submitted pursuant to Paragraph 1 of the Administrative Order which was issued to Reilly on August 1, 1984 pursuant to Section 106 of CERCLA.

Pursuant to Paragraph 1 of the Order, Reilly Tar must "... submit a complete design including plans and specifications for the construction of a granular activated carbon (GAC) treatment system at the St. Louis Park municipal drinking water wells designated SLP 15/10." (Emphasis supplied). The design which Reilly submitted on December 21, 1984 and January 11, 1985 fails to include the plans and specifications which demonstrate the mechanism for integrating the GAC treatment system into the existing municipal system at SLP 15/10. Consequently, the design cannot be approved as submitted.

Pursuant to the terms of Paragraph 4 of the Order, Reilly shall have ten calendar days from receipt of this Notice within which to submit the modifications required by such notification. The design for the GAC system must be modified to address the following comments and questions regarding such design:

1. Is the proposed system upstream or downstream from the existing sand filters?

2. What is the headloss through the system under clean and dirty bed conditions?

3. If the head available from the existing pump at SLP-15 is inadequate to pump through both the GAC columns and the sand filters, where will booster pumps be installed ?

4. If the GAC system is located downstream from the existing filters, what filter piping modifications are included in Reilly's scope of supply?

5. What yard piping is included in Reilly's scope of supply?

6. Will the proposed system (and implied provisions for future expansion) be placed in a building or outdoors? If outdoors, what freeze protection will be supplied?

7. Where will the proposed facilities be located?

8. How will the proposed facilities be located?

9. What civil facilities (driveways, etc) are included in Reilly's scope of supply?

10. Are mini-columns to be provided so that alternate carbons can be evaluated?

11. Is interconnecting piping with SLP-10 included in Reilly's scope of supply?

12. If the system is downstream from the existing filters, what will the operating pressure be in the filters, and are the filters adequate to withstand such pressure?

13. The surface loading rate for each adsorber receiving 600 gallons per minute (gpm) would be 7.6 gpm/ft^2. This loading is greater than the four to five gpm/ft^2 used during the pilot scale testing of the Calgon Filtrasorb 300 Granular Activated Carbon. This increased loading rate may adversely affect the performance of the adsorbers in removing PAH compounds. Has Reilly considered how this effects the performance criteria?

14. The Calgon specifications under Section 1.4 Design Summary give a nine minute empty bed contact time at 600 gpm per vessel. Using a ten ft diameter by 14 ft high vessel we calculate a vessel volume of 1100 ft^3. 600 gpm is the equivalent of 80 ft^3/minute. 1100 ft^3 divided by 80 $feet^3$/minute equals 13.75 minutes. A contact time of 13.75 minutes would of course be more desirable than a nine minute contact time. How does Calgon determine the contact time?

15. The flow velocity of 600 gpm is a six inch pipe is 6.7 feet per second (fps). The ASCE publication "Pipeline Design for Water and Wastewaters" recommends that velocities in a pipe should normally be less than five feet per second so that the friction losses will be within reason. The next larger size pipe may be appropriate for the raw water line.

16. Drawing 9209 CG-102 shows a six inch influent line splitting into two six-inch lines handling 600 gpm each. 1200 gpm seems a bit much for a six-inch line.

17. What is the source of backwash water? Will it be adequate to provide 1200 gpm for the duration of the backwash process?

18. A check valve may be advisable in the backwash influent line.

19. How is raw water distributed into the top of the adsorber?

20. Performance levels should be set for:

    a. carbon change - PAH levels in effluent; and

    b. backwash - psi drop from top to bottom of adsorber.

21. Drawing 9209 CG-101 detail seven shows a Johnson Screen inserted over a tee. It is not clear as to how this is accomplished.

22. Materials used for process piping and appurtenances shall meet appropriate AWWA standards.

23. The project shall be designed to meet the provisions of the Minnesota Plumbing Code and the Recommended Standards for Water Works .

24. The installation procedures (i.e., pressure testing, disinfection, etc.) shall be included in the specifications.

25. Piping diagrams (to scale) shall be included in the plans. This shall include all water and wastewater lines.

26. Replacement of carbon should be implemented prior to breakthrough. This time frame should be determined by pilot and/or full-scale studies.

In addition to addressing the foregoing comments and questions, the following information must be submitted in order to permit U.S. EPA to evaluate the design for the GAC treatment system:

1. A process flow diagram from well head to the finished water storage tank (similar in detail to Calgon Drawing No. 9209CG-102) showing existing and proposed new facilities.

2. An overall conceptual site plan illustrating the location of proposed facilities and the extent of yard piping.

3. An equipment list showing design capacities/size of major items of equipment such as tanks, pumps, etc.

4. A hydraulic profile through the proposed system,

5. A brief discussion of the architectural concepts for any proposed building .

6. A brief discussion of what event(s) would "trigger" installation of the implied future second stage GAC columns.

7. The schedule for mobilization and construction of an approvable design.

If you have any questions with regard to this notification, I will be happy to discuss it with you.

Sincerely,

Robert E. Leininger
Assistant Regional Counsel

Attachment

cc: Robert Polack